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## **A Comparative Study of Japan and China Regarding the Use of Frame Theory in Media Research: Toward the Development of Risk Communication**

**JUNQING XU <sup>1)</sup> and EMAKO MIYOSHI <sup>1)</sup>**

### **Abstract**

Frame research, which has flourished since the 1980s, has been hailed as a new paradigm for studying the relationship between the media, public opinion formation, and social movements. This paper focuses on the use of frame theory in media research for two reasons. On the one hand, there is a need to rethink frame theory in the current situation of the rapid development of information technology. On the other hand, the possibility of new developments in frame theory can be seen from the progress of risk communication. In addition, this paper compares the situation of the use of frame theory in media studies in Japan and China. In Japan, research on risk communication and awareness formation has increased rapidly since the Fukushima Daiichi nuclear accident in 2011. In China, the rapid development of internet space, especially the activation of social media, has further complicated the structure that affects risk communication and perception, so new developments in frame theory are expected.

As a result, in both Japan and China, the frame is used as a tool to analyze the social structure of reality or the process of structuring. In theoretical research, various themes have been examined, and a number of analyses have been made, but without reference to the characteristics of East Asian society, and without resulting in developments of the theory itself. In empirical research, the two countries have different emphases on frame production, content, and effect. From the broader perspective of communication studies, when examining framing effects, the two countries have different focuses on their relationship with public opinion or with personal cognition. Through the above analyses, frame theory has been widely used in such fields as media studies, cognitive psychology, and political communication studies, with many research results in each field, but there still remain such issues, as the integration of frames in different fields. From the perspective of globalization, there exists a tendency toward intercultural communication; and the format of information exchange has been renewed with the advent of we-media, so the current framework of frame production, content, and effect has to be reconsidered. At the same time, risk communication has a natural relationship with framing behavior, so the new significance of frame theory is expected to be realized through empirical research on risk communication.

**Key words:** Frame Theory; Framing Effects; Risk Communication; Risk Cognition

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## 1. Introduction

Frame research<sup>1)</sup>, which flourished in the 1980s, was praised as a new paradigm for studying the relationship between media and public opinion formation, social movements. Open and multidimensional research methods have been indicated in the present now that frame theory has seen widespread use in media research, but there is some ambiguity in its use. In other words, although there is a large amount of research that uses frames as an analysis tool, there is insufficient consideration on the theory itself. Moreover, there is no established method or standard in the application of frames, and there are many definitions towards frames, resulting in the issue of different application methods for each study depending on the research objectives. Furthermore, frame theory has seen widespread use in a variety of fields including media research, cognitive psychology, and political communication research, but frame research suffers from problems of specialization and subdivision due to the lack of cross-disciplinary comprehensiveness. As such, systematically organizing present status of frame research and its differences in usage while differentiating it from traditional communication theories such as agenda-setting theory and covering the primary concepts and historical performance is expected to contribute to the future development of frame research and provide suggestions for intercultural communication.

The frame theory discussed in this paper is derived from the macro-scale perspective of sociological research methods and the micro-scale perspective of cognitive psychological research methods. First, the sociological origins can be traced to the attribution theory of Fritz Heider and the frame analysis of Erving Goffman (Goffman, 1974). In the case of Heider's attribution theory, it was stated that "when we try to understand others, we make inferences based on a variety of information. This is the process of the mind that connects phenomena and the causes behind it during the process of inference when we observe some given phenomenon." (Imazai, 2011) It was assumed that humans could not comprehend a complex world, and that individuals try to derive hidden causal relationships from sensory information. This theory is interpreted from connections between individual actions and the personal and social factors that contribute to that action. On the other hand, the frame analysis by Goffman "posed the question not of asking what reality is, but rather the question for the sensation of reality that under what conditions are experience and the world realistic. It is positioned in the process of attempting of grasping the framework of experience formation by asking how social experiences are created." (Shiino, 2012) This is a method for analyzing how individuals recognize and understand the situation. Explained simply, human cognition and behavior are influenced by personal and social factors, and it is through this process that the frame is constructed and activated.

Next, cognitive psychological research methods are based on the individual level and examine methods of processing and assembling information. Its origins include Sherif's

frame of reference, and Daniel Kahneman and Amos Tversky's prospect theory (Kahneman & Tversky, 1979). In Sherif's case, it is assumed that individual judgment and cognition are not only influenced by cognitive or psychological factors, but also determined under the appropriate frame. The frame here refers to the standards that govern emotional recognition, logical evaluation, social behavior, and others (Sherif, cited in Scheufele, 2000). In other words, one can immediately recognize what is within the frame one has defined even in a complex world, and if anything, one would recognize the world in the familiar frame. Since then, the existence of a cognitive frame has been pointed out, and this has been recognized among a large number of researchers. Prospect theory is a model of making decisions between several options in terms of known probabilities of the profits obtained and losses incurred for a selected result. This theory considers the framing effect, that is, the process of how choices change when identical information is presented in different ways. From here, it becomes clear that individuals facing a specified problem go beyond a fixed cognitive frame and make selections using complex and diverse frames. As described above, it can be seen that there are two kinds of discussion occurring on frame formation, one is construction by society and the other is selection by individuals. However, it cannot be denied that it is not a single type of frame but rather multiple frames that function in the processes of affecting human cognition and behavior.

Communication research examines the frame mainly from the perspective of social constructionism and emphasizes the influence of the news framing behavior on human perception and behavior. From the sender's point of view, the news frame used is simply one way of interpreting the actual situation. From the receiver's point of view, the news frame used is one of the causes of cognition and behavior. Frequently cited media research interpretations of frame theory include those by Bateson (1955), Goffman (1974), and Gamson (1985). Bateson's theory states that language and meta-communication<sup>2)</sup> function within communication activities, and it was indicated that this meta-communication was a mechanism for thinking about language through human relationships, social culture, and others (Bateson, 1955). This set of language messages and meta-level messages was the first concept of frame. Based on this, Goffman assumed that there were references on which people defined things, and it was this reference that controlled human subjective involvement. With this in mind, he added an interpretation to the frame as a standard that provides a way to explain and understand the signal from the sender to the receiver (Goffman, 1974). Based on the above, Gamson recognized that a frame was a set of behavioral standards that provide people with an overall basis as well as extract and define the main points from various information. As such, the frame includes the definitions of a boundary and building frame, with the former indicating the range of information, and the latter indicating the interpretation of information (Gamson, 1985). It can be seen in such a flow process that the meaning of the frame changed from that of a noun to a verb. When taking into news activities, frames are

used when observing, recording, and communicating an event in order to achieve a given news effect, but this is not necessarily a single type of frame. For analysis, the relationship between frame and multiple actors in the communication process is shown in Fig. 1. Communication is a process in which a series of actions such as selection, construction, and reading are performed on a series of information, and both the news framing and cognitive frame function in this process. As a method for observing events, the frame indicates not only the production of the meaning of the sender, but also the ordered selection methods of the receiver. When switching to the elements of communication, the directions that focus on the three aspects of information production, appearance of content, and the relationship between the receiver and information are presented.

In past research, we have discussed the media (newspaper reports) from the perspective of risk communication in multidimensional aspects with regard to the issue of air pollution, which has received worldwide attention, while being aware of the fact that modern Chinese society has entered what Ulrich Beck referred to as the “risk society.” (Xu et al., 2018; 2019) As a future development, we seek to try to practically cultivate risk communication in civil society by clarifying information transmission and cognitive structure with regard to environmental risk. An approach with not only communication research but also cognitive and social psychology is needed to analyze the effects of media coverage and the effects on social public opinion and individual cognition; thus, the cross-disciplinary concepts and analytical methods of the frame theory must be considered as part of this.

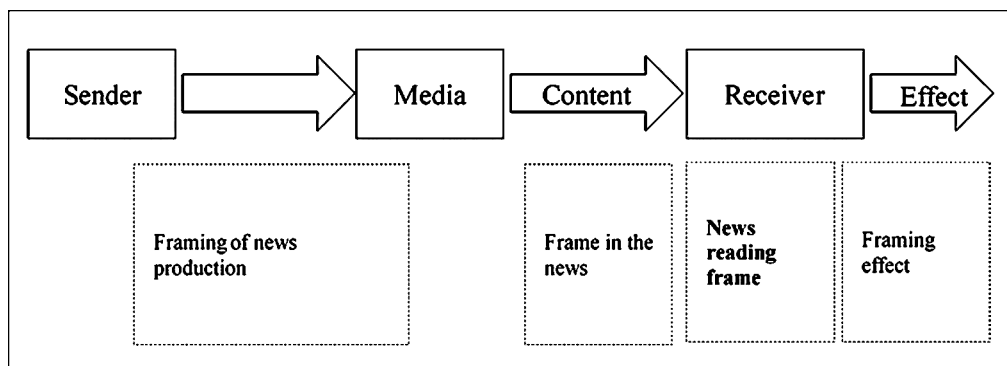


Fig. 1: Relationship between multiple actors during the communication process and frame theory (created by the author)

Thus, based on the overview of frame theory described above, this paper will focus on the use of frame theory in media research, which serves as the basis for this study. Furthermore, as a social demand, frame theory must be reconsidered in the current state of rapid development of information technology. As mentioned above, some of the causes of the several methods of observing, describing, and communicating an event depend on the frame used by the journalist and the frame regulated by the media. In other words, news production does not

show reality as it is, but instead has a constructed subjectivity. Moreover, the amount and type of information obtained is expanding with the rise of online and social media as a product of the rapid development of information technology. The result is that people select what information they read and the formation of cognitive frames has become diversified and complicated, so that opposition to the subjectivity of news production has increased. It can be argued that it is meaningful today to reconsider how frame theory is used in media research in the current increasing situation of information explosion and alternation.

On the other hand, the potential for new developments in frame theory can be seen from the development of risk communication. Modern society is exposed to an unprecedented variety of risks. Increasing coverage of risks exposes latent risks and simultaneously increases the general public's willingness towards risk perception. It is indicated that dissatisfaction with risk communication has emerged as a result, with insufficient information provision and the distrust of information sources and senders in particular. Therefore, the relationship between transmission and cognition in risk communication is thought to become even more important because citizens' comprehension and cooperation are needed to solve risks. In other words, it is because of this that there appears an opportunity to consider the framing behavior of the sender, which facilitates the understanding of the receiver, and also the correspondence between the media frame and the cognitive frame.

This paper specifically compares the situations of Japan and China in its use of frame theory in media research. However, there are many studies in mainland China that reference the Taiwan previous researches; therefore, this study also considers the situation in Taiwan. Originally, most research on frame theory was concentrated in Western countries, but studying the situations of these two countries in the East are thought to be meaningful when considering the factors that influence frame formation, specifically, the social environment of external factors and the personal psychology of internal factors. When considering the perspective of risk communication, Japan has experienced a surge in research on risk communication and cognition formation since the Fukushima Daiichi nuclear disaster in 2011. Furthermore, the rapid development of the online space in China, particularly the activation of social media, has complicated the structure that affects risk communication and cognition, and it is expected that new developments in frame theory would be contributed by these studies.

## **2. Frame Research in Japan and China<sup>3)</sup>**

There is a specific classification method that divides frame research into the three paradigms of "cognitive," "constructivist," and "critical." (D'Angelo, 2002) Based on research content, there is also the classification between the theoretical and the empirical, the former includes "frame definition" and "frame source," and the latter includes "media frame analysis" and "framing effect." (Xie, 2008) The classification in this paper includes research on risk and

frame<sup>4)</sup> in addition to theoretical and empirical research. Most theoretical research in both Japan and China is organized based on previous research from the West. Empirical research will be investigated by classifying into framing analysis research, media frame research, and framing effects research. By the analysis of various topics or media, research that analyzes the framing process or media frame, or that discusses framing effects, is commonplace. Furthermore, with regard to research on risk and frame, this paper seeks to extract elements that particularly deal with risk in frame research and investigate the possibility of new developments in frame theory with regard to risk communication.

### *2.1. Frame Research in Mainland China*

Comprehensive study of frame research in mainland China from 1975 to 2010 showed that empirical research was the main focus and there was little theoretical research (Sun, 2010). More specifically, there is room for research on the framing effect, frame formation process, and connections with the cognition of the receiver (Guo, 2017). Therefore, this paper will provide an overview of frame research in mainland China according to the above classifications while using the representative studies.

#### *2.1.1. Theoretical Research*

About the comprehension of frame meaning, Huang's (2005) examination of a variety of past research showed that the central problem of frame theory was the production of information. That is to say, there are questions of how media should reflect reality, how it determines the receiver's understanding, how it depicts reality with text and context, and its special relationship with the social environment. In other words, the influence of values and ideology should not be ignored because the media is always in the social environment. The above three points were used to explain the meaning of frame, and a relationship between the social environment and framing behavior is emphasized. Furthermore, about the comparisons with the agenda-setting theory, there raised the complementary nature of the two theories (Zhang, 2001; Wang, 2012). However, there have been suggestions of a gradual divergence between the two theories due to the change from a uni-directional transmission of information exchange seen in the agenda-setting theory, to the current multi-directional and unordered form as a result of media diversification (Zhang et al., 2014). It has been pointed out that with regard to media frame formation, framing behavior is interpreted by the relationship between frame formation and ideology, or in other words, the sender's values and the interests of the representative group (Chu et al., 2007). The relationship with details such as the perspective of descriptions and consideration for victims has also been studied (Zhang, 2004; Cui, 2005).

#### *2.1.2. Empirical Research*

There is research on media both inside and outside of China, and there are also comparative

studies on the frame used in media both domestically and internationally on the same topic. However, these are merely simple comparisons (Zhuang, 2012), or they may be fundamentally attributed to country-specific ideologies even when the causes of the differences were analyzed, thus the characteristics of each study tend not to be seen (Chen et al., 2009). As such, this paper primarily organizes researches on domestic media while providing examples.

As mentioned above, discussions will be conducted by dividing them into three sections, namely, framing analysis research, media frame research, and framing effects research. There is an overwhelming amount of media frame research, and two types of analysis methods are presented here: the first is a method of grouping frames based on the press content, and the second studies the problems of the press and the roles that the media should play from the usage conditions of each frame, based on the classification of the determined frames. Meanwhile, there is relatively little framing analysis and framing effect research, but there is some research that analyzes the elements that influence the formation of frames that appear in the press, or those that discuss framing effects and the role of the media through investigations of the receiver. For example, Wan (2010) summarized the frames used by the media (i.e., policy, legal rights protection, story, and moral frames) on the theme of unpaid migrant rural workers' wages. The analysis of the elements that influenced frames showed that government pressure, media marketing, media types, media industry rules, professional principles, and season were all factors. Consideration of the comments on the bird flu coverage by Wei et al. (2015) showed that the current frame only affected the attention of the receiver, and that the formation of their attitudes or cognition was not significantly affected. Moreover, in recent years, the media that has been subject to research has no longer been limited to only traditional newspapers, but also television and online media, as well as social media such as Wechat and Weibo.

### *2.1.3. Research on Risk and Frame*

Media coverage is the best method to capture the information of the general public against unpredictable or unavoidable risks. There are also risk management methods that introduce awareness of the receiver through news framing. However, the amount, content, type, and source of information have all diversified, and the structure that affects the general public's risk perception has become increasingly complex. As such, there has been a demand for improving the reporting methods by comparing the news framing and cognitive frame in order to form accurate risk perception. Furthermore, increased willingness for risk involvement indicated the possibility of the media serving as a platform for risk information exchange and decision making between stakeholders. For example, research by Yu et al. (2017) compared differences between the media frame and the receiver frame by using the three risks of smog, genetic modification, and earthquakes, and showed that the gaps between these two frames influenced risk perception in the receiver.



## *2.2. Frame Research in Taiwan*

### *2.2.1. Theoretical Research*

Researchers proposed a new method of interpreting the relationship with reality based on the characteristics of local society. Zang et al. (1997) pointed out that media framing was the process of transforming reality from that constructed by the media to that received by the receiver, considering it from three levels. In other words, the lowest level refers to the use of vocabulary and grammar, the medium level refers to the description of the cause, result, and impact of the event, and the high level refers to the objective and purpose. These provide a new approach to framing analysis and are often cited in the above-mentioned research from mainland China. Moreover, it is also understood that news production is always influenced and restricted by special conditions, and there is an analysis of the frames that influence the media framing actions that construct reality (Fig. 2). Although such a viewing angle has the characteristics of Chinese society, this has not been systematically studied. As shown in the figure, the media frame is influenced by the news media, industry regulations, and information sources at the organizational level; while at the individual level, it is associated with the cognitive frame of the individual reporter as well as the specified meanings in the political/social environment. A frame that takes into account the characteristics of local society can be constructed because of the interaction between the above-mentioned elements.

### *2.2.2. Empirical Research*

There are previous studies that have analyzed public relations, public opinion surveys<sup>5)</sup>, and political communication based on the characteristics of Taiwan when frame analysis was applied to case studies. There are also special analysis perspectives of metaphor frames and linguistic frames. Metaphor frames are a way of using one aspect to build awareness of another. The greatest feature of metaphor frames is that it become more systematic when building awareness since the two aspects are naturally related. Furthermore, the use of metaphors requires the interpretation of latent meanings, which can resonate among some receivers and lead them to deeper thought (Deng et al., 2001). However, these thoughts are based on the language itself and do not correspond to other languages.

## *2.3. Frame Research in Japan*

### *2.3.1. Theoretical Research*

There have been many frame researches in the field of media research since the 1980s, but it has been pointed out that “the current state is such that their contents have varied greatly depending on the researchers’ position or research objectives, and there is no core theoretical background or a widely accepted methodology.” (Hagiwara, 2007) There is no unified meaning of frame among Japanese researchers, but Okada (1981) has indicated the characteristics of the media frame as follows: “by complying with this media frame,

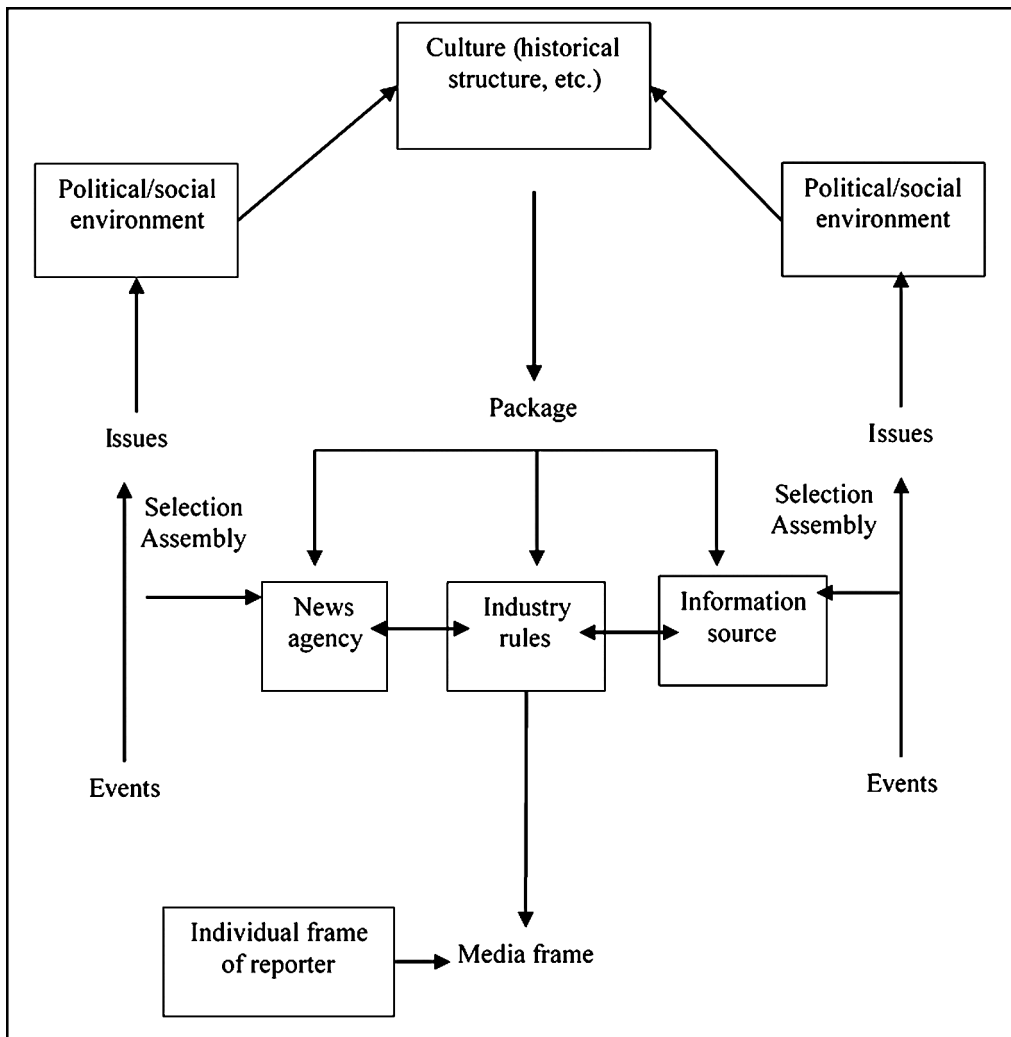


Fig. 2: Analysis of factors influencing the media framing behavior: Created by the author based on Zang (2001)

journalists are capable of processing a large amount of information quickly and efficiently, and package it as news. The receiver can then perceive and understand reality based on the media frame. It is to say that media frames perform these dual functions.” In other words, a dual approach from the sender and receiver is taken towards the meaning of the frame. Analysis of the relationship between television coverage and receivers by Kaigo (2000) showed that the media frame was persistent, with the characteristic that it always modifies towards the flow of events, and defined the meaning of the frame as a conceptualization tool for communication, interpretation, and evaluation when the media is transmitting information. Meanwhile, Yanase (2015) applied the psychological frame concept, which is that human behavior is captured from the internal processes that form individual actions and behavioral choices, to media research.

From the above-mentioned research, the ways in which the frame is conceptualized varies widely depending on the purpose or perspective of the study. By comparing it with other theories, Takeshita (2008) viewed the framing concept as a pedigree of agenda-setting research and stated that “framing research investigates how the media frames a given conflict or situation and how this is associated with the receiver’s perception of reality,” referring to the concept of “second-level agenda-setting.” In other words, the resulting effect expansion from “what to think” to “how to think” is emphasized. About the analysis of frame formation process, Karasudani (2001) showed that the idea of insisting on a single influential factor is inappropriate for clarifying the mechanism of frame formation by analyzing several theories.

### *2.3.2. Empirical Research*

It is common in empirical research to not only analyze frames, but to also consider the framing process, or analyze the relationship with framing effects. Recent framing research can be broadly classified between “frame building” and “frame setting.” The former clarifies the background of media frame formation from more of a sociological standpoint, whereas the latter clarifies how the framing behavior of the media affects receivers from more of a psychological standpoint. Otsubo (2006) envisioned the four frames of infectious disease aspect, economic loss aspect, food aspect, and ethical aspect regarding the bird flu outbreak, and investigated the respective changes in press volume and content as well as the differences due to the presence of associations with the foreign from a frame building direction. Yanase (2012) summarized the media frame usage methods in coverage of the “radioactive cesium-contaminated cow problem” and discussed whether the information transmission by them was suitable for people based on a frame setting standpoint.

### *2.3.3. Research on Risk and Frame*

Hirakawa (2018) indicated that framing has an extremely important significance in risk communication. The reason for this is that “it is not uncommon that the risk debate occurring in society seems to be on the rights and wrongs of perception of reality, such as how much risk there is, but in fact, the debate is regarding framing discrepancies of what is seen as a problem and how.”

Moreover, when analyzing from the perspective of the personalization of risk, new risks fall directly upon individuals, and its causes are the consequences of personal factors. Individual selection is based on personal risk perception, and personal frame perception is connected to the framing effect of the media, and thus the relationship between individual behavior and media framing needs to be analyzed in risk determination and response. The analysis of this relationship is the main focus of recent researches on risk and frame. For example, research by Yanase (2015), which used the environmental risks after the Fukushima Daiichi nuclear disaster as an example, analyzed the relationships between the media frame and the receivers’

perception. Furthermore, it became clear that the framing effect of the media would serve as a clue towards forming the attitude for provoking dissatisfaction and anxiety about information and content, and for investigating responsibility for the disaster. The conclusion was that the type of information source and personal information requirements were factors in the formation of these perceptions.

### 3. Comparisons and Discussion

First, interpretations of frame theory, the definition of frames, and research methods are not systematized in either Japan or China with regard to theoretical research. Furthermore, various themes have been incorporated, many analyses have been conducted, and research value has been recognized, but characteristics in Eastern society have not been utilized nor have these researches contributed to the development of theory. The media frame has the advantage of being an analytical tool that makes it clear that the relationship between the sender and receiver could be seen through the same frame. On the other hand, it has the difficulty of meeting demands for inclusion due to discrepancies in the research directions based on the sender and receiver sides, and academic differences in sociological and psychological concepts. However, it is because of this diversity that foundational analysis can be conducted in various research disciplines and on various themes, and the possibility of simplifying complex problems can be provided. It is also thought to be associated with the current situation in which there is a lack of development or accumulation of methodologies or theory. About the differences, research in Japan is clearly divided between that of the frame, framing, framing effects, framing building, and framing setting. However, research in mainland China mixes together a number of elements, such as between the noun and verb of frame and framing, the frame analysis and framing analysis in research content, and the framing building and framing setting<sup>6)</sup>. Furthermore, a majority of research in China still remains in the area of communication when looking at disciplines associated with frame research, while research in Japan is somewhat associated with political science due to political communication analysis and is also deeply related to cognitive psychology due to the emphasis of empirical research.

Next, about empirical research, frame research in mainland China has increased since 2000, and around 100 articles are currently published every year. Approximately 70% of these are articles on empirical research when looking at classification statistics of frame research (Fig. 3). However, there is insufficient depth and breadth of frame research, and there is a large amount of research on the analysis of text frames based on press content while still lacking research on the associations with various stakeholders in the communication process (Guo, 2017). It can also be seen with regard to the analysis of text frames that the references used by researchers and the standards by which frames are extracted are different between studies. In contrast, empirical research in Taiwan shows the analysis methods of the metaphor frame

or linguistic frame based on characteristics of society, while simultaneously using these empirical researches to extract the elements that influence the framing behavior of the media. Empirical research in Japan includes a large number of framing effect research accompanying improvements in personal perception formation, willingness to engage with society, and information literacy. Though there is the difference of research in Taiwan standing on the perspective of social constructivism and research in Japan standing on the perspective of cognitive theory, both types of research have their own characteristics, and the systematic formation of research associated with the media frame and both the sender and receiver can be seen.

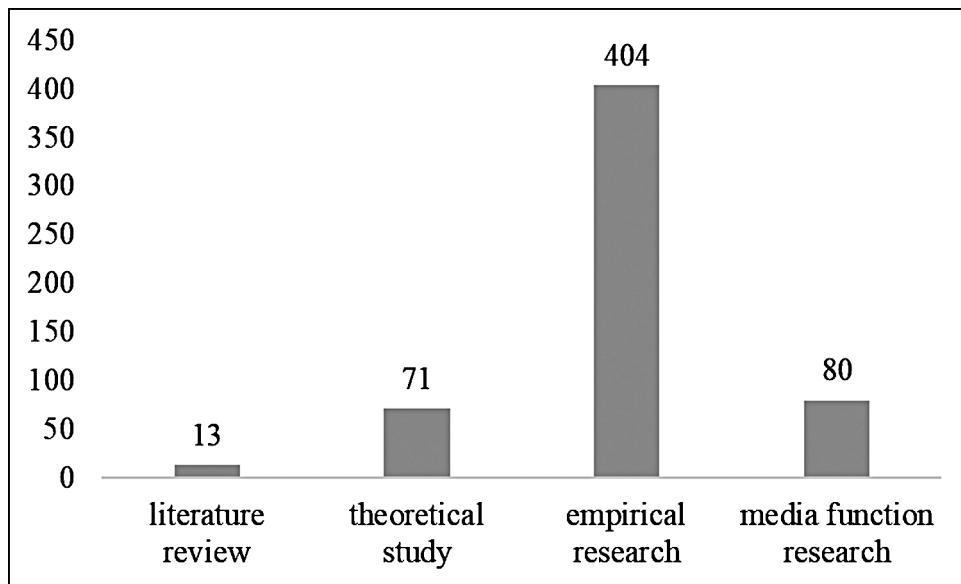


Fig. 3: Classification of frame research from 1999 to 2015: Created by the author based on Guo (2017)

From the perspective of the role of the media, research in China emphasizes the influence on social opinion, while research in Japan emphasizes the effects on individual perception. However, the recent development of the online space in China has resulted in the development of frame research on online media and social media, while this has not yet occurred in Japan. There is a concern that systematic framing analysis of online and social media cannot be conducted if the associations with detailed problems are not confirmed, such as the ways in which increased complexity of information sources affects framing behavior and receivers' perception behavior, and what happens to the trust relationships in such new media.

Japanese research on risk and frame emphasizes the relationship between the media frame and cognitive frame and empirically considers the relationship between the two. Meanwhile, some research in China is still at the stage of recognizing the differences between the two, and there is a lack of deeper analysis on correlations. It goes without saying that the occurrence

of these differences is associated with the differences in risk governance of the two countries. Risk governance in Japan emphasizes risk perception and actions of the general public, and citizen participation is argued for in the process of governance, including risk identification, investigation, evaluation, policy-setting and implementation (Hirakawa, 2018). However, the government plays a large role in risk governance in China, and there has been more analysis of the effects on social public opinion and cognition than on individual cognition due to the tendency of risk measures by the general public to rely more on policy.

It has been pointed out that the current state of frame research in China is such that there are many masters' and doctoral theses and not as many articles from specialized researchers. Moreover, many researchers' backgrounds are from literature; thus, it has been said that the multidisciplinary and integrating perspective is lacking and empirical research is difficult to conduct (Guo, 2017). If other aspects, including media characteristics or the social environment, are also taken as causes, three points that generate the underlying differences between Japan and China are extracted here. The first is media characteristics. Chinese media is seen as the mouthpiece for the government and plays an important role in the formation of social public opinion, with information released through these media having some extent of repeatability. In contrast, Japanese media is independent of the government, and thus there is the possibility that the perception structure of each individual receiver can vary widely due to the complexity of the released information and information sources. The second is the demands for risk communication. Improvements in the quality of life result in increased attention to health and environmental problems. Risk and risk management became frequently-mentioned keywords following the Great Hanshin Awaji earthquake in January 1995 (Kinoshita, 2016). The "Risk Communication" section in the 1996 Environment White Paper emphasized the importance of risk communication that "shared risk-related information and awareness and promoted appropriate actions through mutual information exchange between stakeholders" in order to reduce risk. The need for risk communication then further expanded with the Great East Japan Earthquake in 2011. These demands for bi-directional communication have supported framing effects research and cognitive structure research. Meanwhile, in China, with the leap forward development of economy, the negative impact on the environment has gradually appeared in recent years, under the double-edged sword of development, the demand for risk cognition and action began to increase, but it started relatively late. Furthermore, in order to maintain the balance between development and environment, the media framing analysis is generally related to social cognition, in other words, public opinion. Finally, the third is citizen literacy. The impact of social public opinion varies according to the collection, understanding, and processing capabilities of information. Thus, the framing effect of the media would be weakened and there would be a tendency to rely more on personal cognitive frames with high information literacy, while the framing effects of the media would become unpredictable with lower information literacy.

#### 4. Future Developments

With regard to the use of frame theory in media research, both Japan and China apply the frame as a tool for analyzing the social composition of reality and composition process. However, empirical research using case studies place different emphases on frame production, content, and effects. From the broader perspective of communication studies, when examining framing effects, the two countries have different focuses on their relationship with public opinion or with personal cognition.

Future research topics will be touched upon here through the comparison of research in both Japan and China, as shown above. First, although frame theory is widely used in the disciplines of media research, cognitive psychology, and political communication research, and there have been many research achievements in each respective field, problems in the integration of cross-disciplinary frames and the modeling of the relationships of frames in each discipline still remain. Next, there is a tendency of cross-cultural communication from the perspective of globalization, and this requires the interpretation of the latent meaning of frames and framing behaviors from different cultures. Furthermore, the emergence of We Media<sup>7)</sup> from the development of information technology has generated a participatory news production and transmission format in which anybody can participate. Although this has removed the boundary between the sender and receiver, the predictions of transmission effects have become increasingly complicated due to the complexed human relationships between the sender and receiver. However, there appears a chance to reconsider the existing framework of frame production, content, and effect, due to the emergence of such a new format.

Risk communication provides an opportunity for systematically reconsidering frame theory through its natural relationship with framing behavior. Risk communication includes stakeholders such as the government, media, specialists, businesses, and the general public, and the frames used by each stakeholder are mutually intertwined with one another. Thus, the relationships between each frame need to be organized in order to maximize the correspondence between framing intentions and framing effects. This is also further expected to contribute to frame theory. Simultaneously, conformity in the reproducibility of risk for both senders and receivers is needed so as not to generate discrepancies in risk perception from a cross-cultural perspective with globalization of risk. The basis of risk communication lies in information sharing, but the ways in which information symmetry could be achieved between stakeholders remain an issue. It is recognized that mutually understanding each other's frames and building trust is also important in addition to information sharing. As such, we would like to explore new significance of frame theory through empirical research of risk communication in future studies.

## Notes

- 1) The frame research covered in this paper includes research on frame theory and framing behavior. Research on frame theory is based and developed on Western theories, whereas framing research is used in actual situations of frame theory and considers the processes and influential factors of framing behavior.
- 2) During the communication process, people not only engage in simple message exchange, but also do so at a meta-level (e.g., non-verbal expressions, gestures). This type of meta-message exchange behavior is referred to as meta-communication.
- 3) Frame research in both Japan and China is often based on previous studies in the West, but this paper does not describe the content of Western research in detail, nor does it particularly touch upon research that introduces prior Western research, instead focusing on a discussion by extracting analysis results (or characteristic studies) in Japan and China. Furthermore, research in mainland China often references the Taiwan previous researches, and thus the researches in mainland China and Taiwan are discussed separately.
- 4) Research on risk and frame is a type of empirical research, but this was uniquely extracted since this paper investigates its development into risk communication. Another reason is that framing effect research in China is often associated with public opinion formation, or in other words, social perception, but in research on risk and frame, the framing effect is associated with individual perception.
- 5) Public relations emphasize the role of communication in maintaining relationships between organization, group, individual and public environment, public opinion. Public opinion surveys are studies on the general opinions of the public, and surveys are typically conducted within the scope of political or social life. Both public relations and public opinion surveys investigate the relationship between media and public opinion.
- 6) Both “frame analysis” and “framing analysis” exist in the literature, but there is some research on the analysis of media frames that is still referred to as framing analysis. The boundary between framing effects and effects on perception have not been clarified; thus, distinguishing between frame building and frame setting also becomes difficult.
- 7) We Media allows for individuals to communicate about themselves. For this reason, information has become increasingly complex, and the truthfulness and scientific aspects of information have become questioned as a result of the communication of information consumed by individuals. Meanwhile, the influence of human relationships has increased through communication, as well as the reliability structures of information change.

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